

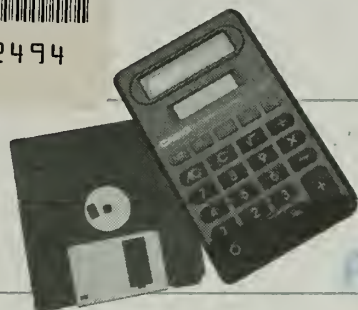
Occupational Opportunities

Your Guide to Job Prospects in Massachusetts

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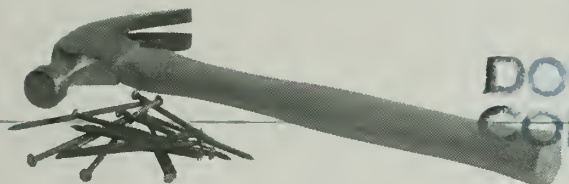
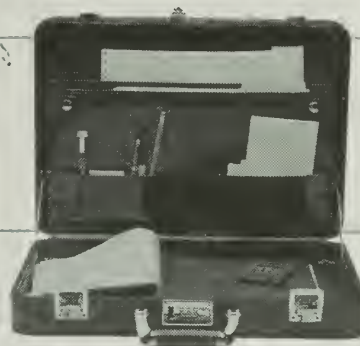


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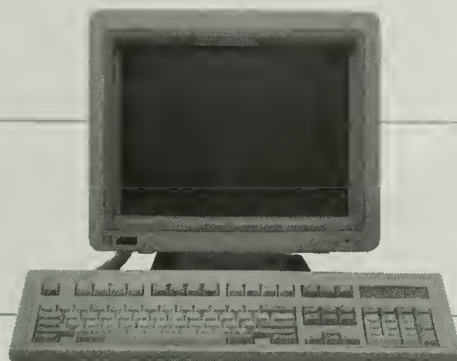
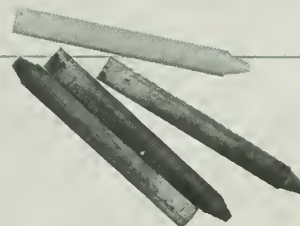
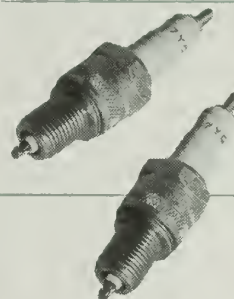
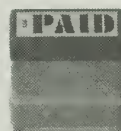


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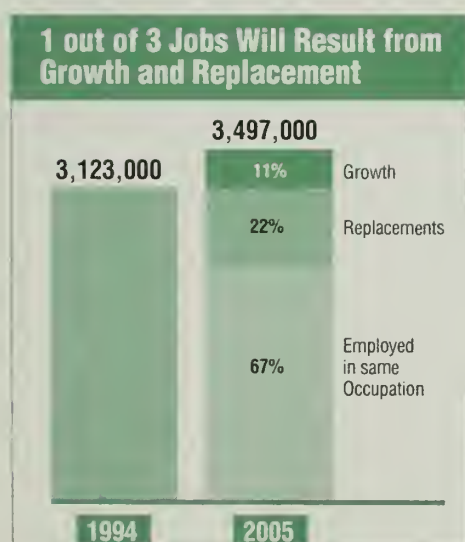


The Massachusetts Job Outlook: an overview of major job trends

By 2005, the Massachusetts economy is projected to generate 374,000 new jobs, a growth rate of 12 percent, from 3,123,000 in 1994 to 3,497,000 in 2005. An additional 760,000 jobs will result from the need to replace workers who retire, move up the career ladder, change careers, return to school, or leave the labor force. In total, over 1.1 million jobs should result from both economic growth and the need to replace workers.

What occupations will grow rapidly and have the largest numerical increase in employment, or offer the most replacements opportunities? The most jobs overall? This bulletin addresses these basic questions and discusses the impact of the projections on education and training.

- Professional and technical workers together should gain the most jobs (337,000). They have the best of both worlds: 46 percent of all new jobs and 22 percent of all replacement jobs.
- Service workers claim the second largest number of job openings (230,000) due to their high turnover and because much of the work they perform—such as cooking and cleaning—cannot be automated. They should surpass clerical workers as the second largest group of job holders.
- Marketing and sales workers should net the third largest number of job openings (167,000), followed by clerical workers (129,000). Although each should capture the same number of replacement jobs, marketing and sales workers should gain many more new jobs than clerical workers (48,600 vs. 7,000). The impact of office automation will limit the growth of many clerical jobs.
- Managerial and administrative workers should gain 111,000 jobs overall or 10 percent of the total—a share equal to the proportion of jobs they now hold. Even as corporations restructure, more skilled managers will be needed to provide direction to the state's expanding number of new businesses.
- Operators, fabricators and laborers and precision production workers should gain a total of 86,000 and 74,000 jobs respectively—the bulk of which should arise from replacements. However, these levels will not maintain these workers share of total employment in Massachusetts, and by 2005 precision production workers and operators, fabricators and laborers should account for a smaller share of jobs than they do now.



Job Market Dynamics

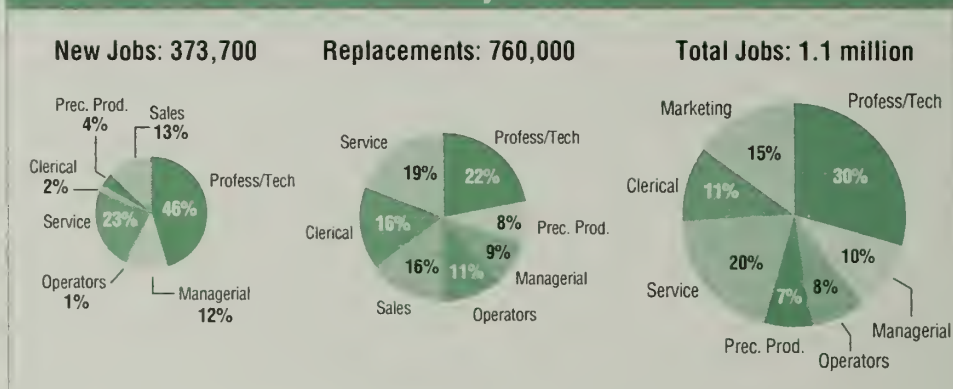
Job openings arise from both increased demand for workers due to economic growth and the need to replace workers. Most jobs in Massachusetts will arise from the need to replace workers. By 2005, replacement needs are expected to account for 22 percent of Massachusetts' 3.5 million total jobs while growth will account for 11 percent.

However, fast growing occupations, especially those that result from new technologies, generally offer better opportunities for advancement. Here in brief is an overview of Massachusetts job growth and replacement needs.

Job Growth

- Projected job growth in Massachusetts will vary widely among occupations, ranging as high as 101 percent for systems analysts. In general, occupations that are growing the fastest and adding the most new jobs will require higher levels of education and training.
- Due to the Commonwealth's relatively high mix of knowledge intensive industries and the increasing demand for hardware and software engineers, systems analysts, nurses, therapists and other health and computer specialists, managerial and professional and technical workers should gain three out of five projected new jobs.
- Service workers—e.g. waiters and waitresses, chefs and cooks—should net the second largest number of new jobs. This is the only occupational

Distribution of Massachusetts' Projected Jobs



group where jobs that do not generally require formal education and training, are projected to grow faster than average.

- Office and factory automation will limit job growth in many clerical and precision and production occupations. Nevertheless, thousands of new job opportunities should arise.

Replacement Needs

- Jobs will continue to exist in most industries and occupations due to the need to replace workers who retire, receive a promotion, leave the workforce or leave for other reasons.
- For every new job due to growth, there will be two jobs resulting from replacement needs. However, in the professional and technical group, where there is a substantial time and investment in education and training, the number of openings due to growth will equal the number of openings due to replacement.

- Professional and technical occupations will still generate the greatest number of replacement jobs because of the overall size of this group.

- Replacement needs are generally the greatest in occupations such as retail sales and food service which employ a high percentage of young and part-time workers who are more likely to change occupations before settling into a career path.

- Clerical workers should gain over 121,000 replacement jobs or 16 percent of all replacements compared to 2 percent of the projected new jobs.

- Replacement needs will become more apparent in the coming years as increasing numbers of baby boomers retire from the workplace.

Rankings of Specific Occupations

Table 1 identifies the specific occupations that have the fastest growth, the most new jobs, the most replacements and the most jobs overall. It is important to notice the difference in the rankings. Employment of systems analysts is projected to grow rapidly and

provide large number of new jobs, but few replacement jobs. Other occupations like elementary school teachers will provide thousands of replacement jobs, but few new jobs. Consequently, an occupation that is projected to grow slowly or decline may still provide large numbers of jobs overall because of replacement needs.

Table 1: Rankings of Specific Occupations

FASTEST GROWING	MOST NEW JOBS	MOST REPLACEMENTS	MOST JOBS OVERALL
Systems Analysts	Systems Analysts	Salespersons, Retail	Salespersons, Retail
Home Health Aides and Homemakers	Registered Nurses	Cashiers	Cashiers
Human Services Workers	Home Health Aides and Homemakers	Waiters and Waitresses	Waiters and Waitresses
Computer Engineers	Salespersons, Retail	Senior and Mid-Level Managers	Senior and Mid-Level Managers
Physical and Occupational Therapy Assistants	Senior and Mid-Level Managers	General Office Clerks	Registered Nurses
Economists	Waiters and Waitresses	Secretaries, Except Legal and Medical	Systems Analysts
Physical Therapists	Cashiers	Counter Attendants, Lunchroom	Secretaries, Except Legal and Medical
Paralegals	Nursing Aides and Orderlies	Marketing and Sales Supervisors	Marketing and Sales Supervisors
Medical Records Technicians	Computer Engineers	Janitors and Cleaners	Janitors and Cleaners
Dental Assistants	Janitors and Cleaners	Registered Nurses	General Office Clerks
Dental Hygienists	Human Services Workers	Bookkeeping, Accounting, Audit Clerks	Home Health Aides and Homemakers
Occupational Therapists	Marketing and Sales Supervisor	Clerical Supervisors	Clerical Supervisors
Employment Interviewers	Receptionists and Information Clerks	Secondary School Teachers	Nursing Aides and Orderlies
Securities and Financial Sales Agents	Guards	Bank Tellers	Receptionists and Information Clerks
Medical Assistants	Clerical Supervisors	Sales Floor Stock Clerks	Secondary School Teachers
Correction Officers	Financial Managers	Elementary School Teachers	Financial Managers
Nursery and Greenhouse Managers & Workers	Securities and Financial Sales Agents	Nursing Aides and Orderlies	Guards
Bill and Account Collectors	Preschool and Kindergarten Teachers	Hand Packers and Packagers	General Maintenance Repairers
Amusement and Recreation Attendants	Food Service and Lodging Managers	General Maintenance Repairers	Human Services Workers
Computer Service Technicians	Lawyers	Accountants and Auditors	
	Residential Counselors	Financial Managers	
	General Maintenance Repairers	Police Patrol Officers	
	Secretaries, Except Legal and Medical	Receptionists and Information Clerks	
	Licensed Practical Nurses		
	Physicians		

Education and Training Impact

Through 2005, job opportunities will continue to exist for all levels of education and training. However, the demand for skilled and educated workers will increase faster than the demand for less skilled workers. Moreover, skill levels for all jobs will rise as the workplace becomes more complex and integrated with the global economy.

In terms of new jobs being created, occupations that require an associate's degree or higher are projected to grow the fastest and account for the most new jobs. For example, of the 374,000 projected new jobs, two out of five will require a bachelor's degree or higher.

Occupations that do not require formal education and training and hence can be learned in a short-time, i.e. a few days or weeks, and obtained fairly easily, will account for the second largest number of new jobs (28 percent). Since many jobs in this category turnover fairly frequently, jobs at the lowest training level will continue to account for the most overall openings. (See chart on page 5.)

Although the overall pattern of Massachusetts job growth is weighted towards occupations that require a bachelor's degree or higher, large numbers of new jobs will be created that require less formal education and training. For example, occupations that require formal on-the-job training or related work experience such as those for security analysts, police officers and detectives, electricians, cost estimators, and food service and lodgings managers, account for 18 percent of the projected new jobs.

Another 12 percent of projected new jobs should require post-secondary education, but less than a bachelor's degree. Included in this training category are jobs for registered nurses, LPNs, computer equipment repairers, legal and medical secretaries and radiologic technicians. See Table 2 on page 6 for a listing of specific occupations having the fastest growth and the most new jobs within each employment and training category.

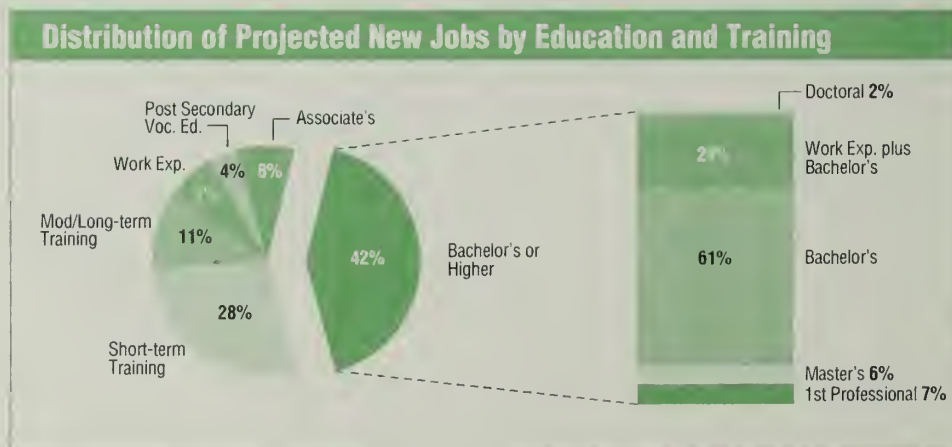
In summary, education and training will become even more important in the Massachusetts workplace. Due to replacement needs, jobs will continue to be available at all levels of education and training, but workers with more education and training will have more options in the emerging economy and better prospects for rising up the career ladder and earning higher salaries. However, workers at all levels of education and training will be required to upgrade their skills to keep pace with changes in technology.

Defining and Using the Education and Training Requirements Categories

It is important to remember that there is more than one way to qualify for a job, and education and training requirements can vary from one employer to another. Registered nurses, for example, may obtain their training in bachelor's degree and diploma programs, although most in Massachusetts are trained in associate's degree programs. Since many registered nurses also obtain their training in bachelor degree programs, employment growth in the associate's degree category may be somewhat overstated. The education and training requirement categories are guides to help you relate the importance of education and training to specific occupations. Below are descriptions of each of the educational and training categories.

First Professional Degree (e.g. M.D., J.D.)

This degree is the minimum preparation required to practice law, medicine, or dentistry or enter the clergy.



Only 8 of the 730 occupations, accounting for 1.5 percent of Massachusetts employment, require this level of training.

Doctoral degree.

These occupations are primarily in academia and the physical, biological, and social sciences and require at least 3 years of full-time academic work beyond the bachelor's degree. These occupations account for 1.3 percent of Massachusetts employment compared to only 0.8 percent of the nation's, consistent with Massachusetts' higher concentration of colleges and universities.

Work experience, plus a bachelor's or higher degree.

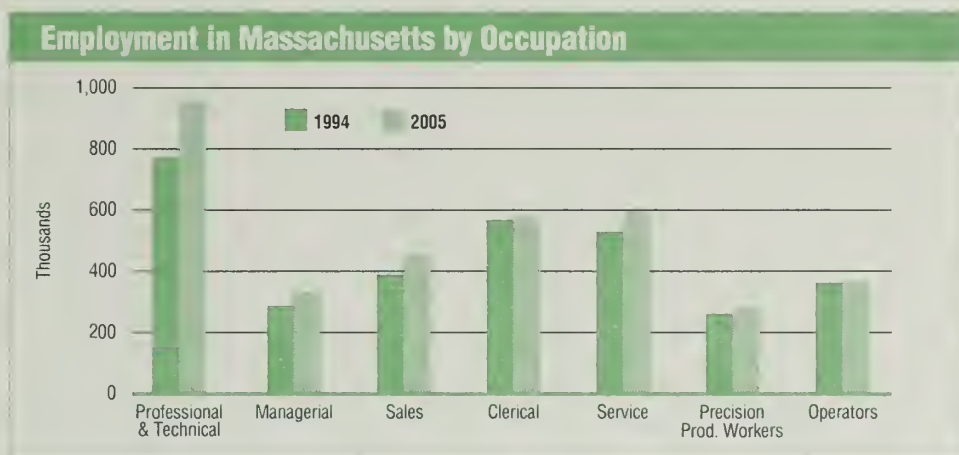
These occupations are primarily centered in management and are filled with experienced staff promoted into management, such as engineers who advance to engineering manager. In Massachusetts, 8 percent of the jobs require this level of education and training. Due to the concentration of Massachusetts high tech industries, this proportion exceeds the 6.5 percent U.S. average.

Bachelor's degree.

Minimum training requirements for these occupations found mostly in professional areas include 4 years of full-time academic work after high school. Approximately 13 percent of Massachusetts jobs require a bachelor's degree compared to 11 percent in the U.S.

Associate's degree.

Most occupations in this category are related to health and law professions



and require two years of full-time academic work after high school. A total of 26 occupations, accounting for over 142,000 jobs or 4.6 percent of Massachusetts employment, require this level of training.

Post-secondary vocational training.

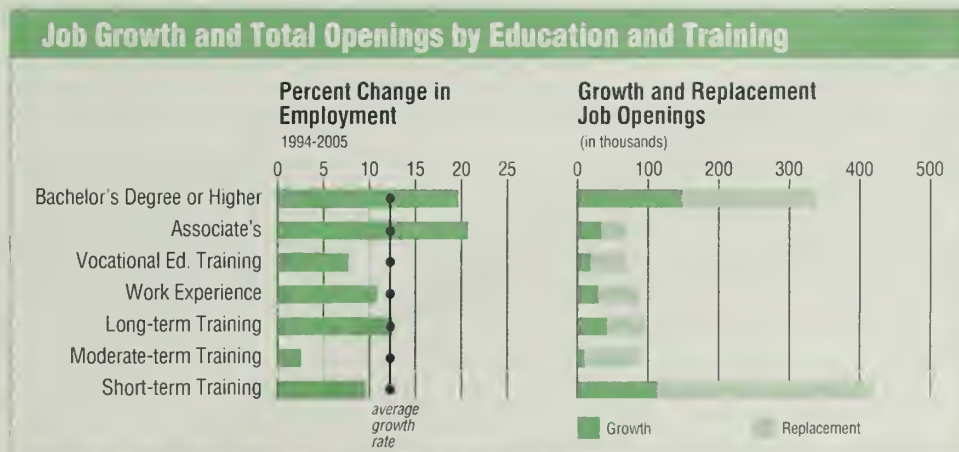
The length and type of training varies for occupations in this category. Some training lasts only a few weeks while others may last more than a year. In others, a license is required after completing the training and passing an exam. A total of 32 occupations require this type of training, and account for 6 percent of total jobs.

Work-experience in a related occupation.

Primarily centered in supervisory or managerial occupations, jobs in this category require skills and experience that have been developed in another occupation or the Armed Forces. This category accounts for 8 percent of the Commonwealth's employment and includes fast growing jobs for cost estimators who have prior work experience in one of the construction trades and lawn service managers who may be hired based on their experience as groundskeepers.

Long-term on-the-job training.

This category includes occupations



that generally require more than 12 months of on-the-job training or combined work experience and formal classroom instruction before workers develop the skills needed for average job performance. Included are jobs for electricians, bricklayers, and machinists that generally require 4 years of apprenticeship training. Also included are intensive employer sponsored programs in insurance sales and securities, for example, that workers must successfully complete before they can begin work.

Moderate length on-the-job training.

This category includes 192 occupations where workers can achieve average job performance after 1 to 12 months of combined on-the-job experience and informal training, which can include observing experienced workers. Approximately 12 percent of Massachusetts jobs are in these occupations. This type of training is found among occupations such as medical assistants, bookkeepers, and bakers.

Short-term on-the-job training.

This is the largest employment category with over 1.1 million jobs or 36 percent of the Massachusetts total. It includes occupations where workers can generally achieve average job performance in just a few days or weeks by working and observing experienced employees and by asking questions. Included are jobs for cashiers, bank tellers, and receptionists who are central to the daily operations of most organizations.

Table 2: Fastest Growing Occupation and New Jobs by Education and Training, 1994-2005

Education and Training	Fastest Growing	Most New Jobs
First Professional Degree		
	Lawyers	Lawyers
	Physicians	Physicians
	Clergy	Dentists
	Optometrists	Clergy
	Dentists	Optometrists
	Chiropractors	Chiropractors
Doctoral degree		
	Biological Scientists	College and University Professors
	Mathematicians and Other Math Scientists	Biological Scientists
	Medical Scientists	Mathematicians and other Math Scientists
	College and University Professors	Medical Scientists
Master's degree		
	Management Analysts	Social Workers, Medical and Psychiatric
	Operations Research Analysts	Management Analysts
	Speech Pathologists and Audiologists	Psychologists
	Social Workers, Medical and Psychiatric	Counselors
	Psychologists	Speech Pathologists and Audiologists
	Counselors	Operations Research Analysts
Work Experience, plus a bachelor's degree		
	Engineering, Math, and Science Mgrs.	Senior and Mid-level Managers
	Artists and Commercial Artists	Financial Managers
	Financial Managers	Marketing, Advertising, and Public Relations Managers
	Marketing, Advertising, and Public Relations Mgrs.	Engineering, Math and Science Managers
	Personnel, Training, Labor Relations Mgrs.	Artists and Commercial Artists
	Senior & Mid-level Managers	Personnel, Training, Labor Relations Managers

Table 2 continued

Education and Training	Fastest Growing	Most New Jobs
Bachelor's degree		
	Systems Analysts	Systems Analysts
	Computer Engineers	Computer Engineers
	Economists	Residential Counselors
	Physical Therapists	Accountants and Auditors
	Occupational Therapists	Secondary School Teachers
	Employment Interviewers	Special Education Teachers
Associate's degree		
	Paralegals	Registered Nurses
	Medical Records Technicians	Dental Hygienists
	Dental Hygienists	Paralegals
	Radiology Technologists	Medical Records Technicians
	Respiratory Therapists	Radiology Technologists
Post secondary vocational training		
	Computer Service Technicians	Secretaries, exc. legal and medical
	Radiology Technicians	Licensed Practical Nurses
	Legal Secretaries	Legal Secretaries
	Medical Secretaries	Medical Secretaries
	Emergency Medical Technicians	Hairdressers and Hairstylists
	Licensed Practical Nurses	Computer Service Technicians
Work experience		
	Nursery and Greenhouse Managers	Marketing and Sales Supervisors
	Lawn Service Managers	Clerical Supervisors
	Construction Building Inspectors	Food Service and Lodging Managers
	Adult Education Instructors	Adult Education Instructors
	Food Service and Lodging Managers	First line Supervisors, Construction
Long-term on-the-job training		
	Electronic Pagination Systems Workers	Securities and Financial Sales Agents
	Securities and Financial Sales Agents	General Maintenance Repairers
	Correction Officers	Corrections Officers
	Flight Attendants	Police Patrol Officers
	Police Patrol Officers	Carpenters
	Heating, A/C Refrigeration Mechanics	Automotive Mechanics
Moderate-term on-the-job training		
	Human Services Workers	Human Services Workers
	Physical and Occupational Therapy Assistants	Medical Assistants
	Dental Assistants	Dental Assistants
	Medical Assistants	Instructors and Coaches, Sports
Short-term on-the-job training		
	Home Health Aides and Homemakers	Retail Trade Sales Persons
	Bill and Account Collectors	Home Health Aides and Homemakers
	Amusement and Recreation Attendants	Waiters and Waitresses
	Nursery Workers	Cashiers
	Teacher Aides and Education Assistants	Nursing Aides and Orderlies

Employment by Major Occupational Group, 1994 and projected 2005

Occupational Title	1994 Employment	2005 Employment	New Jobs		Replacement Openings	Total Openings*
			Number	Growth Rate		
Total, All Occupations	3,123,170	3,496,900	373,730	12.0%	760,050	1,133,780
Executive, Administrative and Managerial Occupations	281,630	325,490	43,860	15.6%	66,810	110,670
Professional and Technical Workers	776,470	948,450	171,980	22.1%	164,950	336,930
Marketing and Sales Workers	391,490	440,150	48,660	12.4%	118,200	166,860
Clerical and Administrative Support Occupations	565,160	572,130	6,970	1.2%	121,700	128,670
Service Occupations, including Agricultural	507,480	592,900	85,420	16.8%	144,320	229,740
Precision Production, Craft and Repair	257,830	272,240	14,410	5.6%	60,120	74,530
Operators, Fabricators, and Laborers	343,110	345,540	2,430	0.7%	83,950	86,380

* Total job openings represent the sum of employment increases and replacements.

For More Information....

This report is the second of a two-part series examining long-term employment trends in Massachusetts. A complementary report, *Job Trends: Your Guide to Job Prospects in Massachusetts Industries*, provides information on demand attributed to industry growth. A separate publication, *Career Moves*, profiles jobs in specific occupations, identifying education and training requirements, wages and salaries, and the industries where jobs are currently found.

If you would like more information about these reports or additional data on specific occupations, please call (617) 626-6562, or write the Division of Employment and Training, Economic Research and Analysis Service, 19 Staniford St., Boston, MA. 02114.

The Division of Employment and Training – Making a Difference in Massachusetts

The Division of Employment and Training (D.E.T.) combines unemployment insurance, employment and training services, research, and employer revenue collection in one agency. D.E.T.'s top priority is to serve the employment needs of the Massachusetts business community, and the people they employ.

D.E.T. is the state's source for federal, state and local economic and labor market information. Labor market analysts and economists produce employment, wage and unemployment data, analyze economic trends and compile industry and occupational projections.

This report is one of many publications developed by the D.E.T. Economic Research and Analysis Department to communicate important economic information to Massachusetts job seekers, job counselors, employers and others concerned with labor market issues.

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